

CPET 581 E-Commerce & Business Technologies

B2B E-Commerce: Supply Chain Management & Collaborative Commerce

References:

- Chapter 12 B2B E-Commerce: Supply Chain and Collaborative Commerce,, 8th edition, 2012, by K. C. Laudon and C. G. Traver, publisher Pearson Education Inc.,

Paul I-Hai Lin, Professor
<http://www.etcs.ipfw.edu/~lin>

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Volkswagon Build Its B2B Net Marketplace

- Why didn't Volkswagen want to use a more open or public electronic exchange for its parts supply? Why didn't it join an industry consortium such as Covisint?
- What kinds of services are provided by VWGroupSupply?
- What is eCAP and who benefits from its use?
- Do you think suppliers are disadvantaged by this B2B marketplace?

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Volkswagon Build Its B2B Net Marketplace

- B2B e-Commerce Potentials
 - Lower production costs
 - Increase collaboration among firms
 - Speed up new product delivery
 - Revolutionize product design and manufacturing
- Covisint, www.covisint.com
- Ariba Network, www.ariba.com

- VolkswagenGroup Sypply.com,
<http://www.vwgroupsupply.com/b2bpub/>

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Volkswagon Build Its B2B Net Marketplace

- Convisint, www.convisint.com
- VolkswagenGroup Sypply.com,
<http://www.vwgroupsupply.com/b2bpub/>
 - 36,000 registered suppliers; over 110,000 users
 - Common data repository: procurement data, logistics, production, quality, technical design, and finance
 - Online Catalog: 2.5 million items from 590 global suppliers
 - VWGroup platform & technology
 - eCap (Electronic Capacity Management)

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Convisint

- www.convisint.com – Enabling Information Ecosystem
 - Healthcare Solutions
 - Employee Solution
 - Manufacturing Solution
 - Ford Supplier Portal
 - Chrysler Supplier Portal

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Trends in B2B E-Commerce

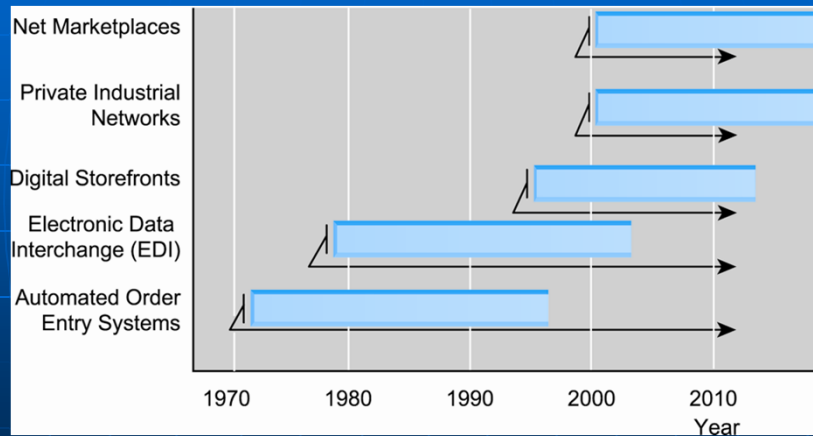
- Firms more comfortable with **Internet security, payments**, helping expand use of B2B channels
- Increased use of **cloud and SaaS**
- **Cost** of using B2B systems has fallen, allowing smaller firms to participate
- Splitting **global B2B systems** into **product and region centered systems** for lower complexity and risk
- B2B communities emerge in same industry, reducing costs by **integrating ERP systems**

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Figure 12.1 Evolution of the Technology Platforms in B2B Commerce



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EDI (Electronics Data Interchange)

- EDI Communication Standards for sharing business documents such as
 - Invoice
 - Purchase Orders
 - Shipping Bills
 - Product Stocking Numbers (SKUs)
 - Settlement Information

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B2B Commerce Solutions

- Seller-side solutions
 - Automated Order Entry Systems
- Buyer-side solutions
 - EDI
 - Hub-and-spoke system
 - Vertical markets (for a specific industry)
 - Horizontal markets (for many different industries)
- B2B electronic storefront
 - Online catalogs of products for public by one supplier

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B2B Commerce Solutions

- Net marketplace
 - A single Internet-based commerce environment
 - Hundreds to thousands of suppliers and buyer
- Private Industrial Network (private trading exchange)
 - Internet-based
 - Collaborative commerce

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Potential Benefits of B2B E-Commerce

- Lower administrative costs
- Lower search costs for buyers
- Reduced inventory costs
 - Increasing competition among suppliers
 - Reducing inventory carried
- Lower transaction costs:
 - Automation, eliminating paperwork
- Increased production flexibility by ensuring just-in-time parts delivery

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Potential Benefits of B2B E-Commerce

- Improved quality of products by increasing cooperation among buyers and sellers
- Decreased product cycle time by sharing of designs and production schedules
- Increased opportunities for collaborating with suppliers and distributors
- Greater price transparency
- However, some risk is posed by increased globalization and consolidation

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Types of Procurement

- Types of Procurement
 - Direct goods
 - Directly involved with production process
 - Auto industry: steel for auto body
 - Indirect goods
 - Not directly involved with production process
 - MRO goods (Maintenance, Repair, and Operations)
- Methods of Procurement
 - Contract purchasing
 - Spot purchasing

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The Procurement Process & Supply Chain

- Figure 12.3 The Procurement Process

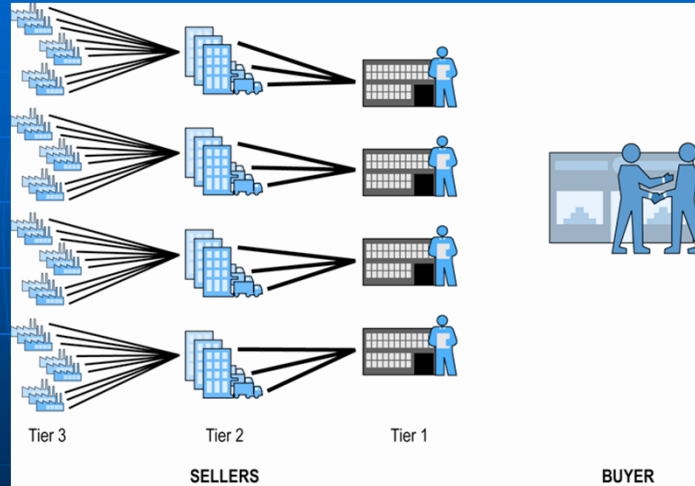
Search	Qualify	Negotiate	Purchase Order	Invoicing	Shipping	Remittance Payment
Catalogs Internet Salespersons Brochures Telephone Fax	Research Credit History Check with Competitors Telephone Research	Price Credit Terms Escrow Quality Timing	Order Product Initiate Purchase Order (PO) Enter into System Mail PO	Receive PO Enter into Financial System Enter into Production System Send Invoice Match with PO Internal Review Enter into Warehouse System	Enter into Shipper's Tracking System Ship Goods Deliver Goods Enter into Tracking System	Receive Goods Enter Shipping Documents into Warehouse System Verify and Correct Invoice Resend Invoice Cut Check Add Corrected Invoice to Back Office Systems

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Fig. 12.4 The Multi-Tier Supply Chain



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The Role of Existing Legacy Enterprise Systems

- Legacy computer system
- Material Requirement Planning (MRP_
- Manufacturing Resource Planning
- Enterprise Resource Planning (ERP)
- Supply Chain Management (SCM)
- Customer Relationship Management (CRM)

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Trends in SCM and Collaborative Commerce

- Just-in-time and lean production
- Supply chain simplification
- Adaptive supply chains
- Sustainable supply chains
- Electronic data interchange
- Supply chain management systems
- Collaborative commerce

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Just-in-Time and Lean Production

- Just-in-Time production
 - Method of inventory cost management
 - Seeks to eliminate excess inventory to bare minimum
- Lean production
 - Set of production methods and tools
 - Focuses on elimination of waste throughout customer value chain, not just inventory

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Supply Chain Simplification

- Reducing size of supply chain
 - Working with strategic group of suppliers to reduce product and administrative costs and improving quality
- Essential for just-in-time production models
- May involve
 - Joint product development and design
 - Integration of computer systems
 - Tight coupling
 - Ensuring precise delivery of ordered parts at specific times

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Adaptive Supply Chains

- Reducing centralization
 - Reduce risks caused by relying on single suppliers who are subject to local instability
 - e.g., European financial crisis, Japanese earthquake
- Creating regional or product-based supply chains
 - Allowing production to be moved to temporary safe harbors in case of local manufacturing disruptions

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Sustainable Supply Chains

- Taking social and ecological interests into account
 - e.g., water usage, air pollution
- Using most efficient environment regarding means of production, distribution, logistics
 - Good business, over long-term
 - Create value for consumers, investors, communities

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Electronic Data Interchange (EDI)

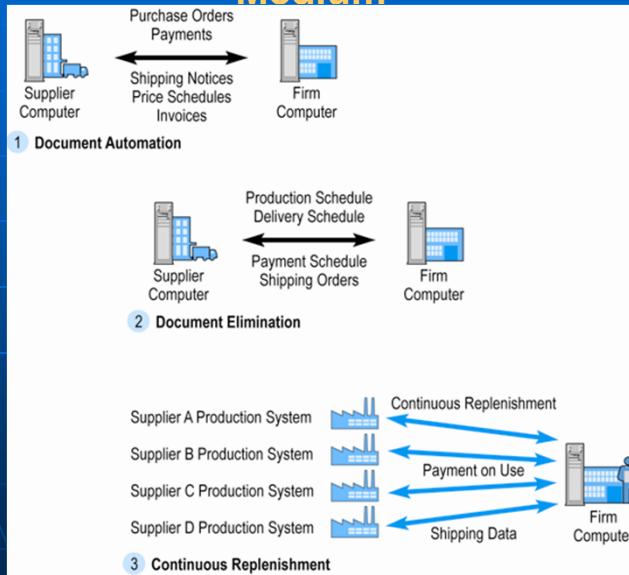
- Broadly defined communications protocol for exchanging documents among computers
- Stage 1: 1970s–1980s
 - Document automation
- Stage 2: Early 1990s
 - Document elimination
- Stage 3: Mid-1990s
 - Move toward continuous replenishment/access model
- Today:
 - EDI provides for exchange of critical business information between computer applications supporting wide variety of business processes

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Fig. 12.5 The Evolution of EDI as a B2B Medium

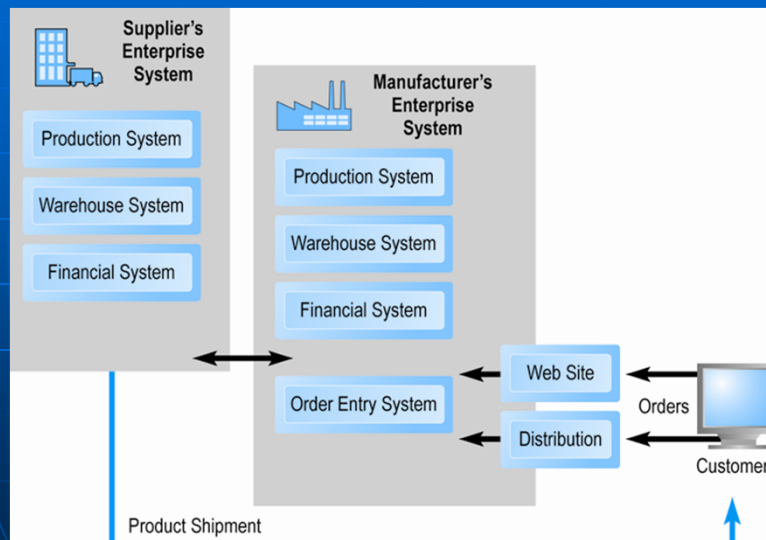


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Fig. 12.6 Supply Chain Management Systems



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RFID Autoidentification: Giving a Voice to Your Inventory (Insight on Technology: pp. 781-782)

- Why is RFID an improvement over bar codes?
- How does RFID work?
- How is Walmart utilizing RFID?
- What impact will widespread adoption of RFID have on Internet B2B commerce?

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Collaborative Commerce

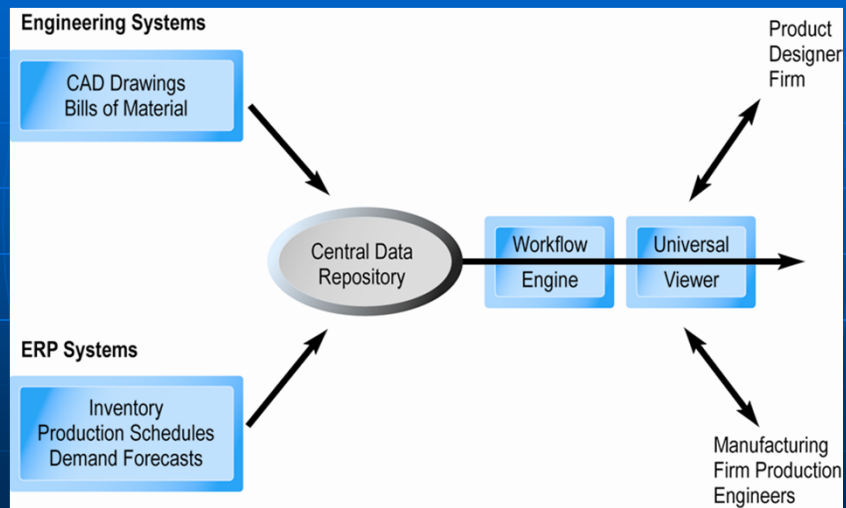
- Use of digital technologies for organizations to collaboratively design, produce, and manage products through life cycles
- Moves focus from transactions to relationships among supply chain participants
- Unlike EDI, more like an interactive teleconference among members of supply chain
- Use of Internet technologies for sharing designs, documents, messages, network meetings, video-conferencing

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Figure 12.7 Elements of a Collaborative Commerce System



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Two Main Types of Internet-Based B2B Commerce

1. Net marketplaces:

- Bring together potentially thousands of sellers and buyers in single digital marketplace operated over Internet
- Transaction-based
- Support many-to-many as well as one-to-many relationships

2. Private industrial networks:

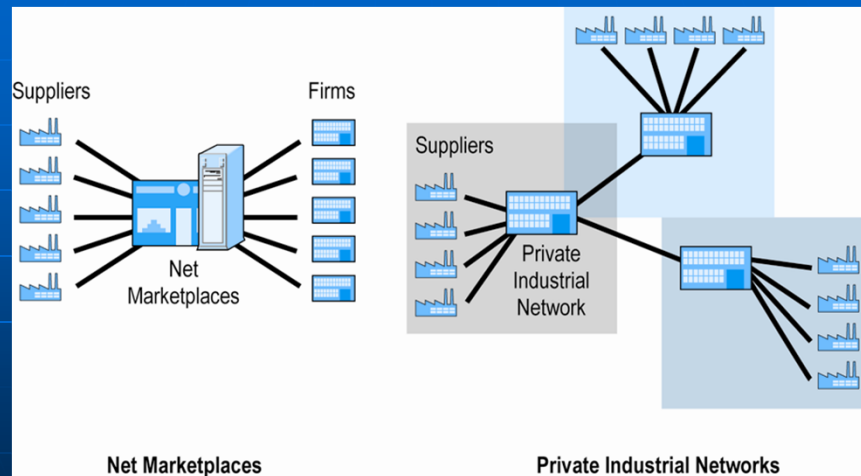
- Bring together small number of strategic business partner firms that collaborate to develop highly efficient supply chains
- Relationship-based
- Support many-to-one and many-to-few relationships
- Largest form of B2B e-commerce

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Fig. 12.8 Two Main Types of Internet-Based B2B Commerce



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Net Marketplace

- Ways to classify Net marketplaces
 - Pricing mechanism, nature of market served, ownership
- By business functionality
 - What businesses buy (direct vs. indirect goods)
 - How businesses buy (spot purchasing vs. long-term sourcing)
 - Four main types
 - E-distributors
 - E-procurement networks
 - Exchanges
 - Industry consortia

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TABLE 12.2

**OTHER CHARACTERISTICS OF NET MARKETPLACES:
A B2B VOCABULARY**

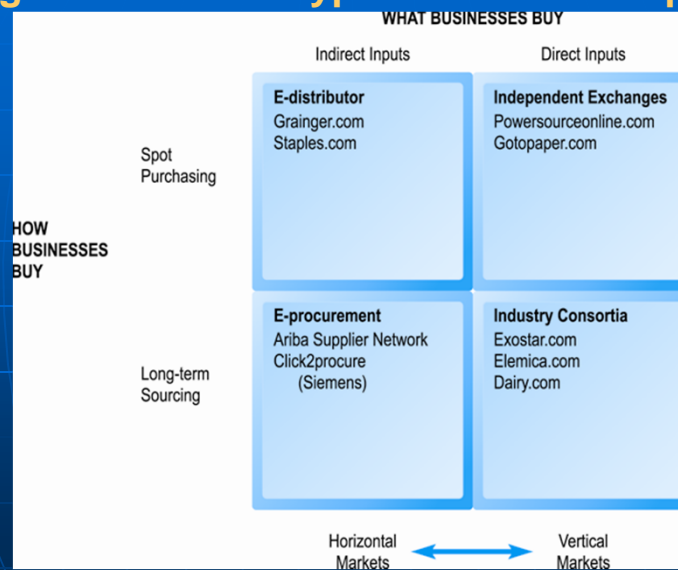
CHARACTERISTIC	MEANING
Bias	Sell-side vs. buy-side vs. neutral. Whose interests are advantaged: buyers, sellers, or no bias?
Ownership	Industry vs. third party. Who owns the marketplace?
Pricing mechanism	Fixed-price catalogs, auctions, bid/ask, and RFPs/RFQs.
Scope/Focus	Horizontal vs. vertical markets.
Value creation	What benefits do they offer customers or suppliers?
Access to market	In public markets, any firm can enter, but in private markets, entry is by invitation only.

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Figure 12.9 Pure Types of Net Marketplace



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Types of Marketplace

- E-Distributor
 - <http://www.grainger.com/Grainger/wwg/start.shtml>
 - <http://www.staples.com/>
- E-Procurement
 - Ariba Supplier Network, <https://service.ariba.com/Supplier.aw>
 - Siemens <https://w9.siemens.com/cms/supply-chain-management/en/Pages/scm.aspx>
- Independent Exchanges
- Industry Consortia

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Types of Marketplace

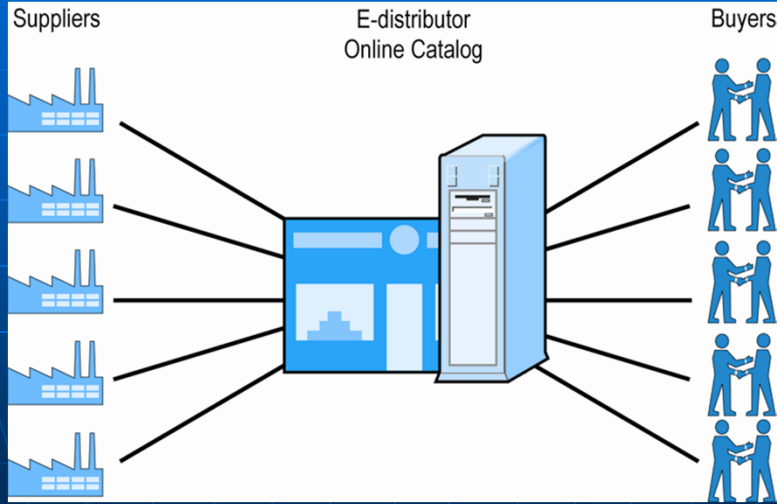
- E-Distributor
- E-Procurement
- Independent Exchanges
 - <http://www.powersourceonline.com/>
 - <http://www.go2paper.com/home/index.asp>
- Industry Consortia
 - <http://www.exostar.com/>
 - <http://www.elemica.com/>
 - <http://www.dairy.com/>

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Fig. 12.10 E-Distributors

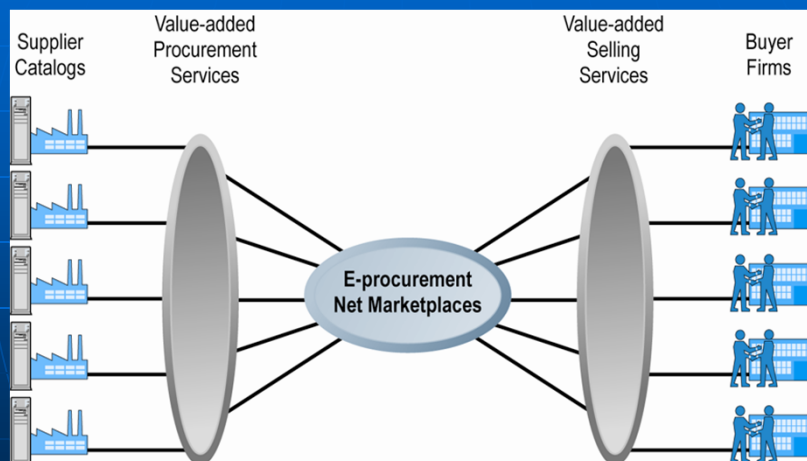


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Fig. 12.11 E-Procurement Net Marketplaces

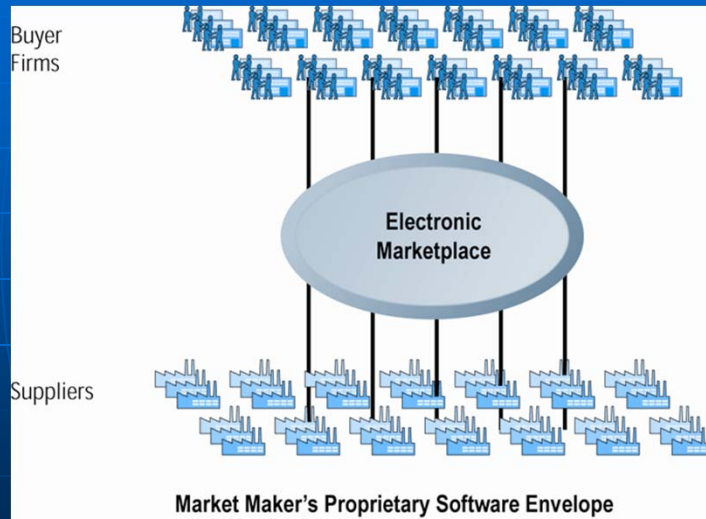


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Fig. 12.12 Exchanges



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TABLE 12.3

EXAMPLES OF INDEPENDENT EXCHANGES

EXCHANGE	FOCUS
PowerSource Online	Computer parts exchange
Converge	Semiconductors and computer peripherals
Smarterwork	Professional services from Web design to legal advice
Active International	Trading in underutilized manufacturing capacity
IntercontinentalExchange	International online marketplace for over 600 commodities
Electronic Parts Exchange	Proprietary software and database that matches available inventories to customer part demand.

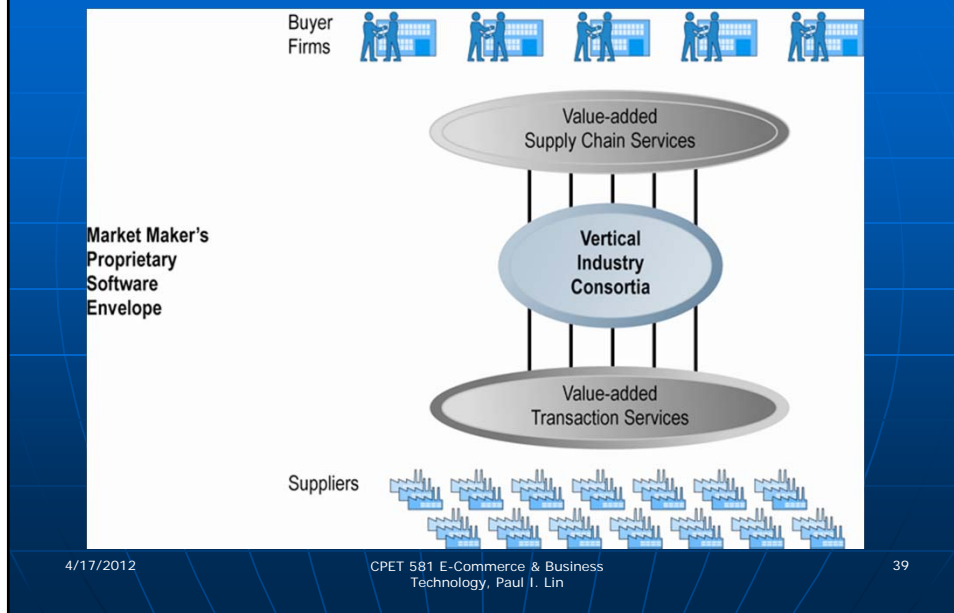
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Fig. 12.13 Industry Consortia



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TABLE 12.4 INDUSTRY CONSORTIA BY INDUSTRY (SEPTEMBER 2010)

INDUSTRY	NAME OF INDUSTRY CONSORTIA
Aerospace	Exostar
Automotive	SupplyOn
Chemical	Elemica
Financial	MuniCenter
Food	Dairy.com, EFSNetwork
Hospitality	Avendra
Medical Services, Supplies	GHX (Global Healthcare Exchange)
Metals and Mining	Quadrem
Paper and Forest Products	PaperFiber
Shipping	OceanConnect
Textiles	The Seam (Cotton Consortium)
Transportation	Transplace

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Industry Consortia By Industry (April 2012)

- Aerospace: Exostar, <http://www.exostar.com/>
- Automotive: SupplyOn
- Chemical: Elimica, <http://www.elemica.com/>
- Financial: MuniCenter, https://www2.themunicenter.com/custom_splash.asp
- Food
 - Dairy.com, <http://www.dairy.com/>
 - (eFSNetwork + Maverick) <http://www.foodnavigator.com/Financial-Industry/Internet-food-sites-eFS-Network-Maverick-to-merge>

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Industry Consortia By Industry (April 2012)

- Hospitality:
 - Avendra, <http://www.avendra.com/Pages/default.aspx>
- Medical Services, Supplies:
 - GHX (Global Healthcare Exchange), www.ghx.com
- Metals and Mining:
 - Quadrem (part of Ariba), <http://www.quadrem.com/>
- Paper and Forest Products
 - PaperFiber, <http://www.paperfiber.com/>

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Industry Consortia By Industry (April 2012)

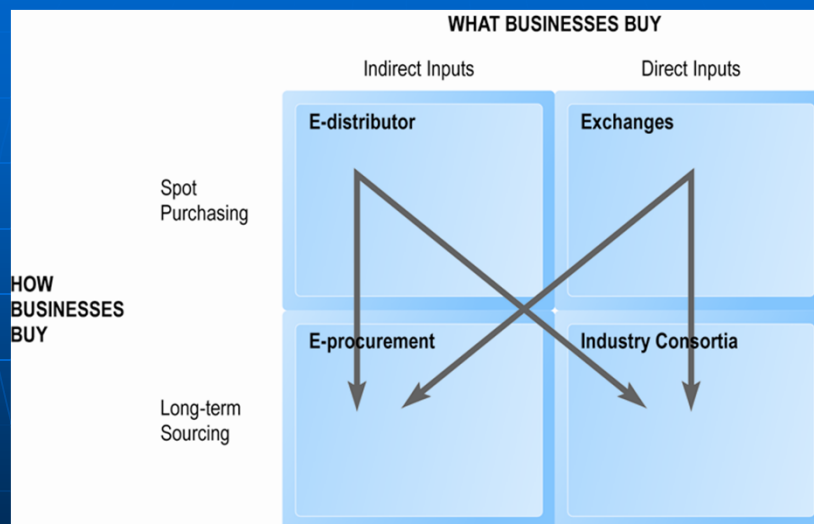
- Shipping
 - OceanConnect, <http://www.oceanconnect.com/>
- Textiles
 - The Seam (Cotton Consortium), <http://www.theseam.com/>
- Transportation
 - Transplace, <http://www.transplace.com/EN-US/Pages/default.aspx>

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Fig. 12.14 Net Marketplace Trends



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Private Industrial Networks

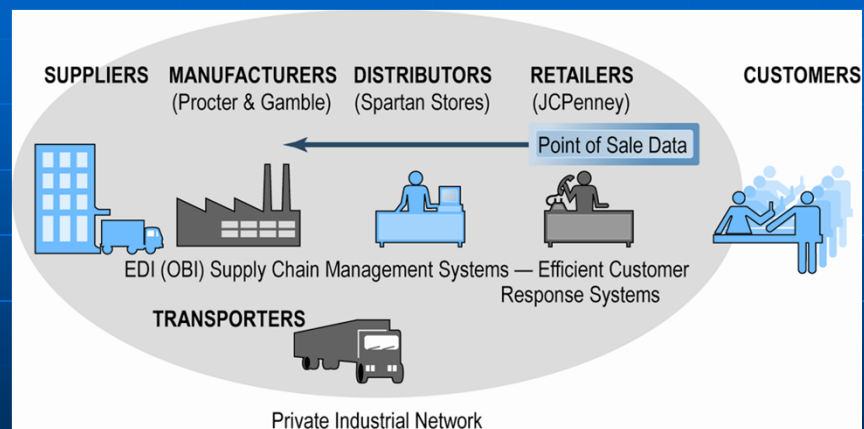
- Private trading exchanges (PTXs)
- Web-enabled networks for coordination of trans-organizational business processes (collaborative commerce)
 - Direct descendant of EDI; closely tied to ERP systems
 - Typically, involve manufacturing and support industries
 - Typically, center on single, very large manufacturing firm that sponsors network
- Range in scope from single firm to entire industry
- Example: Procter & Gamble

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Fig. 12.15 Procter & Gamble's Private Industrial Network



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Characteristics of Private Industrial Networks

- Objectives include:
 - Efficient purchasing and selling industry-wide
 - Industry-wide resource planning to supplement enterprise-wide resource planning
 - Increasing supply chain visibility
 - Closer buyer-supplier relationships
 - Global scale operations
 - Reducing industry risk by preventing imbalances of supply and demand
- Focus on continuous business process coordination
- Typically, focus on single sponsoring company that “owns” the network

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Walmart Develops a Private Industrial Network (Insight on Business, pp. 800-801)

- What is Walmart’s Retail Link system and how has it changed since the early 1990s?
- Why is Walmart still using EDI-based systems?
- Why won’t Walmart join in an industry-backed system?
- How can other companies compete with Walmart?

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Walmart Develops a Private Industrial Network (Insight on Business, pp. 800-801)

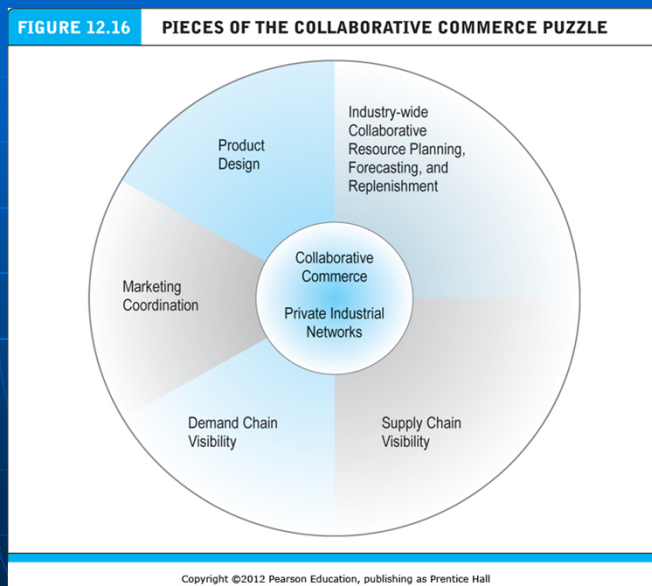
- Forms of collaboration:
 - Collaborative resource planning, forecasting, and replenishment (CPFR):
 - Working with network members to forecast demand, develop production plans, and coordinate shipping, warehousing and stocking activities to ensure that retail and wholesale shelf space is replenished with just the right amount of goods

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Fig. 12.16 Pieces of the Collaborative Commerce Puzzle



Implementation Barriers

- Concerns about sharing of proprietary, sensitive data
- Integration of private industrial networks into existing ERP systems and EDI networks difficult, expensive
- Requires change in mindset and behavior of employees and suppliers
 - All participants lose some independence